

Claims

1-19. Cancelled

20. (Currently amended) A method of treating pain in a human suffering from pain comprising administering to a human suffering from pain a composition comprising an amount of Glial Cell Line-Derived Neurotrophic Factor (GDNF) effective to alleviate the pain in the human, wherein the GDNF alters tetrodotoxin-resistant sodium ion current in neuronal cells.

21. (Cancelled.) The method of claim 20 wherein the GDNF alters tetrodotoxin-sensitive sodium ion current in neuronal cells.

22. (Currently amended) The method of claim 21 wherein the neuronal cells are selected from the group consisting of dorsal root ganglion neurons and trigeminal neurons.

23. (Previously presented) The method of claim 22 wherein the dorsal root ganglia neurons are small dorsal root ganglia neurons.

24. (Previously presented) The method of claim 23 wherein the alteration in sodium ion current is due to a change in activity of at least one Na^v sodium channel.

25. (Previously presented) The method of claim 24 wherein the activity of the Na^v sodium channel activity is increased.

26. (Previously presented) The method of claim 24 wherein the alteration in sodium ion current is due to a change in expression of at least one Na^v sodium channel.

27. (Previously presented) The method of claim 26 wherein the expression of the Na^v sodium channel is increased.

28. (Previously presented) The method of claim 23 wherein the alteration in sodium ion current is due to a change in activity of at least one SNS/PN3 sodium channel.

29. (Previously presented) The method of claim 23 wherein the alteration in sodium ion current is due to a change in expression of at least one SNS/PN3 sodium channel.

30. (Previously presented) The method of claim 29 wherein the expression of the SNS/PN3 sodium channel is increased.

31. (Previously presented) The method of claim 23 wherein the small dorsal root ganglia binds lectin IB4.

32. (Withdrawn) The method of claim 20 wherein the GDNF alters a neuronal hyperexcitability associated with the pain.

33. (Withdrawn) The method of claim 20 wherein the pain is associated with paraesthesia.

34. Cancelled

35. (Previously presented) The method of claim 20 wherein the composition is administered by intravenous, intrathecal, intramuscular or subcutaneous injection.

36. (Previously presented) The method of claim 20 wherein the composition is administered orally.

37. (Withdrawn) The method of claim 20 wherein the GDNF is administered in combination with at least one second agent.

38. (Withdrawn) The method of claim 37 wherein the second agent is an analgesic agent.

39. (Withdrawn) The method of claim 37 wherein the second agent alters sodium ion current in neuronal cells.

40. (Previously presented) The method of claim 20 wherein the amount of GDNF effective to alleviate the pain in the human is about 0.1 to about 100 μg per kg body weight.

41. (Previously presented) The method of claim 40 wherein the amount of GDNF effective to alleviate the pain in the human is about 0.1 to about 10 μg per kg body weight.

42. (Previously presented) The method of claim 40 wherein the amount of GDNF effective to alleviate the pain in the human is about 0.1 to about 1.0 μg per kg body weight.

43. (Previously presented) A method of treating pain in a human suffering from pain comprising administering to a human suffering from pain a composition consisting essentially of an amount of GDNF effective to alleviate the pain in the human.

44. (Previously presented) A method of treating pain in a human suffering from pain comprising administering to a human suffering from pain a composition consisting of an amount of GDNF effective to alleviate the pain in the human.